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Case of applying allogenic mesenchymal stem cells of adipogenic origin in veterinary dentistry

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Abstract

© Medwell Journals, 2015. After drawing a permanent tooth (canine tooth) in a dog because of complicated caries, an oroantral fistula was formed in the upper jaw right. Multiple surgeries gave no results and there was a relapse of fistulous tract along the mucogingival junction in the upper jaw right. We performed an operation for guided tissue regeneration in the area of oroantral fistula with simultaneous plastics of soft tissue. We used osteoinductive material was used as allogeneic mesenchymal stem cells in combination with nickelide titanium granules (nitigran). Adipogenic stem cells were isolated from subcutaneous adipose tissue of an adult female dog. The difficulty in using a suspension of mesenchymal stem cells in vivo lies in its spreading into the surrounding tissue in the absence of any carrier material. The three-dimensional porous-permeable nickelide titanium incubators that we use have unique features such as porous-permeable structure with widely open pores, excellent wettability with body fluids, a high biological, biochemical and biomechanical compatibility at the cellular level. We prepared the cellular therapeutic preparation immediately prior to transplantation. We used nickelide titanium granules as a matrix for the local retention of cells. The result of the conducted surgery was a complete closure of oroantral fistula in a dog.

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Keywords

Compatibility, Mesenchyme stem cells, Nickelide titanium granules, Oroantral fistula, Veterinary medicine